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ABSTRACT

To examine the hypotheses that differences exist between Indians and non-Indians in the nonverbal regulation of conversation and that these differences cause functional difficulties in classroom interaction, the study quantitatively examined differences in the nonverbal repertoires of students and teachers in an American Indian school system and a predominantly middle class Anglo school system. Researchers videotaped 11 fifth and sixth grade class sessions in which Anglo teachers in Mississippi Choctaw Indian schools and Lawrence, Kansas, schools used a switchboard participation structure. Researchers recorded data with 2 cameras, one providing a wide field of view of the teacher and the class and the other recording the listener gaze of 18 students (8 Choctaw, 3 non-Choctaw Indians, and 7 non-Indians). The video tapes provided data on student utterances, turn switching pauses, listener gaze, butting-in interruptions, individual versus "choral" speaking, and teacher utterances and switching pauses. All utterances and switching pauses were precisely timed, and transcribed results supported the hypotheses, showing the Choctaw students spoke individually less often, used shorter utterances, interrupted the teacher more often, and gazed more a peers while the teacher was talking than their Anglo counterparts. Choctaw school teachers had longer switching pauses, asked more questions, and used shorter utterances to ask questions of individual students. (SB)

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FINAL REPORT

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Nonverbal Communications Between American Indian Children and Their Teachers

Submitted by Paul Greenbaum

FALL 1983

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Abstract

This study compared nonverbal behaviors associated with classroom conversation in fifth and sixth grade classes in Mississippi Choctaw Indian and predominately white middle-class public schools. Eleven class sessions, organized using a switchboard participation structure, were videotaped to provide comparative data on a variety of nonverbal behaviors (i.e., student utterances, turn switching pauses, listener-gaze, butting-in interruptions of the teacher, individual as opposed to choral speaking, and teacher utterances and switching pauses). Two cameras recorded the data. One camera provided a view of the teacher and the class, while the second camera recorded the listener-gaze of individual students. Choctaw students spoke individually less often ($p < .01$), used shorter utterances ($p < .05$), interrupted the teacher more often ($p < .05$, and, while the teacher was talking gazed more at peers ($p < .05$) than their Anglo counterparts. Teachers at Choctaw had longer turn switching pauses ($p < .05$), asked more questions ($p < .05$) and used shorter utterances to ask individual students questions ($p < .01$). The results supported the hypothesis that cultural differences in nonverbal behavior are associated with functional difficulties in classroom interaction.

Nonverbal Differences in Communication Style Between American Indian and Anglo Elementary Classrooms

"Sociolinguistic interference" caused by cross cultural discontinuities in the rules for speaking, listening, and turn taking has been a recent explanation for at least part of the school difficulties of American Indian and other minority children. It has been suggested that many minority students perform poorly in class because they lack competence in the majority culture's rules for communication (Cazden & Leggett, 1981; Hymes, 1971). Philips (1972, 1976, 1983) notes that the type of instruction, which is used widely in North American classrooms, where the teacher structures interaction like a switchboard operator, creates a context for learning that is culturally inappropriate for Indian children.

Based on participant observation, Philips reports that within Warm Springs Indian homes and community, conversations were not organized such that one person told others what to do or when to speak. Philips claims that among Warm Springs Indians, the regulation of speaker change and the designation of attention differ from the Anglo system; the Indian system consisting of fewer cues, particularly in the nonverbal channel

(i.e., less body movement, gestures, gaze, etc.) that designates speakers, listeners, and next speakers.

If Philips' findings can be generalized to include other American Indian groups, this would suggest that when Indian children enter school, where nearly all the teachers are non-Indians, they encounter for the first time highly structured and directive interactions. The teacher's unilateral control of the floor apportionment process is thus thought to present an unfamilar and contradictory set of rules for the Indian student. This discontinuity, along with differences in nonverbal cues used for regulating the back-and-forth flow of conversation, results in diminished classroom verbal exchanges and presumably less learning. These conditions represent a case of sociolinguistic interference. Because of their different cultural backgrounds, the teacher and students have difficulty communicating and have incommensurate expectations of how each other should act in the setting.

The usefulness of interference theory as an explanation of Indian school problems rests on the validity of two assumptions. The first, which is necessary but not sufficient, is that differences exist between Indians and non-Indians in the nonverbal regulation of conversation. Second, these differences

cause significant problems in face-to-face communication (for a more complete review of interference theory, see Greenbaum & Greenbaum, in press). The purpose of this study is to examine both of these assumptions, with particular emphasis on the former. Although classroom ethnographers have provided a number of qualitative accounts of behavior interpreted as sociolinguistic interference in Indian classrooms, there is very little quantitative evidence concerning the nature and extent of these differences. Recent exceptions include Erickson and Mohatt's (1982) study of Indian and non-Indian teachers at an Odawa school and Guilmet's (1978, 1981) analysis of Navajo and non-Navajo pre-schoolers' speech and gaze behavior.

The present study was a quantitative examination of differences in the nonverbal repertoires of students and teachers in an American Indian school system (Mississippi Choctaw) and one that is predominately comprised of middle-class Anglo students (Lawrence, Kansas). Teachers in both systems were non-Indians who employed the switchboard participation structure.

In face-to-face interaction, nonverbal behaviors represent important channels through which added communication flows. The behavioral cues interactants

use to maintain and control the back-and-forth nature of conversations are considered to be a distinct functional class, known as regulators (cf., Ekman & Friesen, 1969). Nonverbals involved in conversational control would include the following: head nods, gesticulations, gaze, proximity, voice pitch and loudness, and utterance and turn switching pause durations, among others (for more complete reviews, see Cappella, 1981; Rosenfeld, 1978). As a class, these behaviors function over both the immediate and the more distal aspects of conversations; controlling not only who speaks, but also the tempo of the interaction and the more general level of satisfaction that interactants experience in their encounters.

Nonverbal regulators, perhaps due to the exigencies of conversation, tend to remain largely at the periphery of awareness, and are commonly likened to a silent or invisible language. These behaviors are difficult to precisely perceive and control, and thus are thought to be quite problematic in cross-cultural exchanges (von Raffler-Engel, 1980). Cultural differences in this system are often subtle, as in differences in conversational distance which have been observed to occur when speakers from different cultural groups converse (Sussman & Rosenfeld, 1982); or the use of

less speaker-directed gaze by Afro-Americans, when compared to middle-class white Americans (LaFrance & Mayo, 1976). Nevertheless, these differences may have considerable effect on the tenor of face-to-face interaction, particularly in the intercultural school setting. For example, Erickson (1979) has reported that these black-white differences in listener-gaze patterns tend to cause middle-class white counselors to engage in "hyperexplanation" to black students. The students resent this as patronizing, or talking down.

The behaviors selected for examination in the present study were derived from prior research on nonverbal turn taking cues and interspeaker influence effects among middle-class white Americans, and reports of cultural differences between Native- and Anglo-Americans in nonverbal repertoires. Measures included: the duration of teacher and student utterances and turn switching pauses; student listener-gaze, and turn taking patterns (i.e., butting-in interruptions and choral versus individual speaking). The two objective speech variables, utterance and turn switching pause durations, have been shown to mediate mutual influence whereby an interactant's shift in either behavior has been associated with subsequent changes in the other interactant's same or associated

behavior (Cappella & Planalp, 1981; Matarazzo & Wiens, 1972). For this reason, the study included measures of these behaviors for both students and teachers. Listener-gaze, another selected behavior, is an important cue in the floor apportionment process, being typically monitored by speakers both at the start and end of their utterances (Kendon, 1967; Harrigan & Steffen, 1983). The relative frequency of butting-in iterruptions and choral speaking represent measures of how well the teacher's unilateral turn taking rules are being followed by the students.

All of these behaviors are also directly related to commonly reported observations that Indian students: (a) speak very little in class (e.g., Dumont, 1972; Dumont & Wax, 1969; Philips, 1983; Wax, Wax, & Dumont, 1964) and (b) are especially reluctant to engage in individual competition or performances, perfering more peer oriented, cooperative activities (Bigart, 1974; Brown, 1980; Cazden & John, 1971; LeBrasseur & Freark, 1982; Miller & Thomas, 1972; Peterson, 1975). Also relevant are reports of differential patterns of gaze, i.e., less overall gaze and less face-to-face gazing during conversation (Darnell, 1979; Hall, 1969).

It was hypothesized that teachers and students in

Choctaw intercultural classrooms using a switchboard participation structure, when compared to similar Anglo-American classes, would show differences in those behaviors selected for study. It was further hypothesized that, among Choctaw students, the observed differences would be in the direction of decreased classroom participation and increased violations of the turn taking rules of switchboard participation.

Method

Subjects

The ongoing behavior of four fifth/sixth grade classrooms were videotaped in two schools, one located on the Mississippi Choctaw Reservation and the other in a predominately middle-class public school in Lawrence, Kansas. These data were part of a larger data collection effort which videotaped a total of 52 class sessions (25 Choctaw and 27 Lawrence). All taping occured during a two to three week period at each school. Sampling of class sessions was accomplished using the teachers' weekly lesson plans. These documents along with teacher consultations identified the class sessions where instruction involved switchboard participation structures during the forthcoming week; those to be recorded were selected with the aid of a random numbers table. The

current study is based on a total of eleven class sessions (five Choctaw and six Lawrence). The mean duration of a session was 22.8 minutes, ranging from 9 to 42 minutes.

There was a total of 78 students enrolled in the classes that were recorded, 33 Choctaw and 45 Lawrence. Three students in the Lawrence classrooms were American Indians. Teachers in both schools were non-Indian; with one male and one female at each of the schools.

Procedure

Two videotape cameras were used to record each class session. To reduce camera reactivity and novelty effects, no data were used from initial recordings in any of the classes. One camera provided a wide field of view of the teacher and the class while the second camera individually recorded the listener-gaze of 18 students using focal sampling procedures (cf. Altmann, 1974). Among these 18 students there were 8 Choctaws (4 male, 4 female) and 7 non-Indians (4 male, 3 female). In addition, there were 3 Indian students, of different tribal backgrounds, (2 male, 1 female) in the Lawrence classes.

For coding purposes, a duplicate set of tapes was made, to which a digital clock (in seconds) was added to

the corner of the frame. This clock enabled precise timing of the events recorded on the tape. Verbatim transcripts were made of both teacher and student utterances. Each utterance was indexed in the transcript by it's unique onset time. From these transcripts, classroom interactions were divided into four discrete sequential events, which collectively constituted a turn taking round, or exchange, between the teacher and class. These were: (a) teacher utterance, (b) class turn switching pause, (c) class utterance, (d) teacher turn switching pause. An utterance was considered to be the time it took a speaker to emit all the words that speaker was contributing to a particular exchange (cf., Matarazzo & Wiens, 1972); while a turn switching pause was the latency period between the end of one speaker's utterance and the start of another's (cf., Jaffe & Feldstein, 1970). The two observers used a .01 second stopwatch to measure the duration of each event.

Measures of three other types of interactional events were derived from the data. These were: (a) student butting-in interruptions, defined as a student utterance that started and ended within an ongoing teacher utterance (i.e., an unsuccessful student attempt to take the floor as opposed to "back-channeling", cf.,

Ferguson, 1977); (b) choral class responses, i.e., when two or more students verbalized either simultaneously or more usually in quick sequence; and finally (c) teacher questions, or utterances that ended in a direct question.

Students' gaze behaviors were also scored. For each of the 18 sampled students, gaze duration and direction was measured during 12 randomly selected teacher utterances[1]. Gaze duration was measured with a .01 second stopwatch, and gaze direction was classified as one of three mutually exclusive categories; -teacher-, peer-, or object-directed. For each of the selected teacher utterances, the percent gaze in each of the three directions was calculated.

To assess interobserver reliability on the objective speech measures, one of the eleven class sessions was scored by both observers. The reliabilities for listener gaze were derived from having both observers score the gaze of the same three students, one from each student group.

Results

Reliabilty

Among the data scored by both observers, there were no significant mean differences on any of the five

measures ($t < 1.00$). The observed Pearson correlations ranged from .97 to .99.

Analyses

The eleven sessions were treated as independent events for purposes of analysis. The standard significance levels should therefore be interpreted cautiously inasmuch as the data from the same classes may exhibit some between session dependence. Teacher and class utterances and turn switching pauses were each analyzed using a 5 factor partially-hierarchal Analysis of Variance (ANOVA). The two nested factors were Class within School (4 levels) and Session within Class and School (11 levels). The three cross classified factors were School (Choctaw/Lawrence), Class Response (individual/choral), and Teacher Question (yes/no). Percent listener-gaze for each of the three gaze directions (teacher, peer, and object) was analyzed by student type using a one-way Analysis of Variance, a separate analysis for each direction. The relative frequency of the dichotomous variables; teacher questions, choral responses, and teacher interruptions were each analyzed for differences between schools by the Chi-Square statistic.

Between School Differences

Students. Comparisons between students from the

two schools revealed significant differences consistent with the hypotheses. In the analysis of class utterance there was a main effect for School indicating that the Choctaw students had shorter mean utterances than their Lawrence counterparts ($\underline{M}$ = 1.95 vs. 2.77 s, $\underline{F}(1, 7)$ = 6.00, $\underline{p} < .05$). There was also a marginally significant School X Class Response interaction ($\underline{F}(1, 7) = 3.58$, $\underline{p} < .10$). Planned comparisons indicated that the between school difference was only significant for the individual speaking condition, Choctaw vs. Lawrence, solo; $\underline{M}$ = 0.98 vs. 2.59 s, $\underline{F}(1, 7) = 39.79$, $\underline{p} < .05$; choral; $\underline{M}$ = 3.26 vs. 3.89 s, $\underline{F}(1, 7) = 2.23$, $\underline{p} > .10$, respectively). The shorter utterances of the Choctaw students, which occurred during individual speaking performances, accounted for the overall mean differences in utterance between the students. Choctaw individual speaking performances were not only of shorter duration, but also occurred less often with a correspondingly greater relative frequency of choral speaking; Choctaw vs. Lawrence, 43.5% vs. 14.2%, $\chi^2(1, \underline{N} = 11) = 135.97$, $\underline{p} < .01$, accounting for 78.8% of the total variance across sessions. Additionally, Choctaw students exhibited a higher rate of teacher interruptions; Choctaw vs. Lawrence, 19.1% vs. 10.1%, $\chi^2(1, \underline{N} = 11) = 20.93$, $\underline{p} < .05$ accounting for 37.6%

of the total variance across the sessions.

The analysis of listener-gaze revealed that for peer-directed gaze there was a marginally significant effect for student type; $F(2, 15) = 2.76$, $p < .10$). Planned comparisons of the student means indicated that the two groups of Indian students displayed significantly more peer-directed gaze when the teacher was talking than the non-Indian students; $M = 17.7\%$ vs. 7.5%, $F(1, 15) = 4.96$, $p < .05$. There were no significant effects associated with either the amount of teacher- or object-directed listener-gaze, or between school differences in student turn switching pauses.

Teachers. The non-Indian Choctaw teachers' behavior also differed from their Lawrence counterparts in several ways. In the analysis of utterance there was a significant School X Class Response interaction ($F(1, 7) = 16.09$; $p < .01$) and a marginally significant School X Class Response X Teacher Question interaction ($F(1, 7) = 4.26$, $p < .10$). Planned comparisions indicated that there were no significant differences in teacher utterances that were followed either by choral class responses (Choctaw vs. Lawrence, $M = 6.51$ vs. 5.87 s, $F(1, 7) = 1.30$, $p > .25$) or teachers' non-question utterances that preceded students' individual speaking ($M = 8.32$ vs. 7.52 s, $F(1, 7) = 1.55$, $p > .25$).

When asking a question that elicited an individual student response, Choctaw teachers' utterances were shorter than their Lawrence counterparts, $\underline{M}$ = 5.27 vs. 9.69 s, $\underline{F}(1, 7) = 24.30$, $\underline{p} < .01$. This pattern of shorter utterances was similar to that of the Choctaw students' shorter utterances under the same conditions. In addition, the non-Indian Choctaw teachers had longer turn switching pauses, $\underline{M}$ = 0.95 vs. 0.77 s, $\underline{F}(1, 7) = 5.78$, $\underline{p} < .05$). These turn switching pauses directly followed the shorter Choctaw utterances. There was also a significant increased relative frequency of questions asked by the Choctaw teachers (42.2% vs. 29.1%, $\chi^2(1, \underline{N} = 11) = 22.82$, $\underline{p} < .05$), perhaps again related to shorter student utterances and increased choral speaking.

Within School Differences

There were a number of other significant differences in the data which occurred within both schools. Teacher utterances were shorter when students responded chorally as opposed to individually ($\underline{M}$ = 6.30 vs. 7.82 s, $\underline{F}(1, 7) = 10.59$, $\underline{p} < .05$). Conversely, student utterances were longer when speaking chorally ($\underline{M}$ = 3.47 vs. 2.09 s, $\underline{F}(1, 7) = 26.86$, $\underline{p} < .01$) and shorter when being asked questions ($\underline{M}$ = 1.91 vs. 2.72 s, $\underline{F}(1, 7) = 9.01$, $\underline{p} < .05$). There was also a marginal effect for teachers' questions

to be associated with decreased latencies of subsequent teachers' comments, (M = 0.77 vs. 0.88 s, $F(1, 7) = 3.83$, $p < .10$).

Discussion

Erickson (1977) has suggested that the integration of qualitative and quantitative methods will provide an expanded understanding of everyday life in the classroom. Questions examined in this study were based on prior ethnographic descriptions of nonverbal differences between Native American and Anglo classrooms: quantitative measures were used to corroborate and further specify the nature of these differences. The overall pattern of results tends to support the ethnographically derived hypotheses. During classroom switchboard participation, Choctaw students, at a magnitude approximately two times the rate of the non-Indian students, exhibited shorter utterances when speaking individually, spoke individually--as compared to chorally-- less frequently, and interrupted the teacher more often in unsuccessful floor-taking attempts. Compared with non-Indian students, Indian students at both Choctaw and Lawrence had similar higher rates of peer-directed gaze when the teacher was talking. Taken together, these findings seem to reflect both cultural differences and functional difficulties

in classroom interaction between Indian students and their non-Indian teachers.

Reduced duration and frequency of individual speaking indicates comparatively less individual participation among Indian students. Bilingualism may also have contributed to the shorter student utterances. However, the Indian students described by Philips (1983) are monolingual speakers of English, and yet she found patterns similar to the Choctaw classes. The greater incidence of choral responding among Choctaw students, along with their increased peer-directed listener-gaze, are behaviors consistent with an affinity for group rather than individually oriented behavior. This tendency has been cited as characteristic of Indian (specifically including Choctaw) cultural values and tribal life (e.g., Bigart, 1974; Brown, 1980; Dumont, 1972). More specifically, King (1967), in an ethnography of an Indian boarding school in Canada, describes a similar relatively high incidence of student choral speaking and a dislike for individual responses.

> A group conversation can be initiated among them if the children are allowed to speak in unison or several at a time, in disconnected spurts of utterances (or in more formalized choral speaking). As soon

> as attempts are made to narrow such discussions down to one speaker, silence and embarrassment prevail... As a result, teachers come to be satisfied with simple, minimal recitations. (p. 81)

Peterson (1975), based on her experiences as a speech teacher of Mississippi Choctaw adults, noted a similar apparent preference for group, rather than individual, orientations in classroom behavior. Unlike Anglos, Choctaws would neither compete against each other for grades nor criticize their classmates.

In the present study, Choctaw students' higher rates of teacher interruptions and choral speaking are consistent with previous reports of cultural differences in the regulation of talk. Philips' (1972) comments about Indian social activities on the Warm Springs Reservation seem relevant:

> There is no single individual directing and controlling all activity... participation in some form is accesible to everyone who attends. No one need be exclusively an observer or audience, and there is consequently no sharp distinction between audience and performer. And each individual chooses for himself the degree of his participation during the activity (p. 390).

Although likely rooted in the students' cultural experiences, the functional effects of the observed differences apparently represent difficulties in classroom interaction which would presumably obstruct learning. As Cazden and Leggett (1981) point out, "verbal participation in classrooms is important for all children as one indicator of engagement as well as one kind of demonstration to the teacher of what has been learned" (p. 81). Moreover, the Indian students' greater peer-directed gaze while the teacher is speaking may influence the teacher's judgement concerning the students' attention. Cappella (1981), in a recent review of nonverbal behaviors (including gaze) that serve an expressive function notes that these behaviors "will be the behavioral basis for assessments of involvment with another and involvment with the situation" (p. 101). In addition, this difference in listener-gaze may have adverse effects on teachers' speaking performances, as listener-gaze is considered to provide speakers with an important cue for the regulation of their own performances (Kendon, 1967).

Increased teacher interruptions and choral responding, inasmuch as they are violations of the teacher's turn taking rules, would seem to impede classroom exchanges

and conversational flow. Recent research has shown that interruptions are not a unitary phenomena. Ferguson (1977) in a laboratory study of conversations has distinguished four types of mutually-exclusive interruptions. Ferguson found that the type of interruption observed in the Choctaw classroom, butting-in interruptions, reflect a lack of social skill rather than an attempt to dominate. While other types of interruptions have been associated with increased status and dominance (i.e., overlap and silent interruptions, Ferguson, 1977; Beattie, 1981), butting-in interruptions probably reflect the Indian students' misassessment of when the teacher's speaking turn has ended and the floor is open. This perhaps suggests that the Choctaw students are comparatively less familar or comfortable with switchboard participation.

It should be noted that in some respects the observed student behavior profile seems inconsistent with some prior reports of Indian classroom behavior. Unlike Philips (1983) who found that Warm Springs elementary students were reticent and unresponsive, or Wax and his colleagues' descriptions of "walls of silence" in Pine Ridge Sioux and Oklahoma Cherokee classrooms, Mississippi Choctaw students spoke often

and were sometimes quite animated, being only less responsive in that their utterances were comparatively shorter in length.

The higher rate of failed floor-gaining interruptions and choral responses among Choctaw students, which gave the classroom a somewhat chaotic atmosphere, would appear to contradict typifications of Indians as being overly polite and shy. However, disorderly classrooms are commonly associated with minority education; and as Au and Mason (1981) have pointed out, disorder and silence may both represent characteristic student responses to cultural discontinuities in the rules for interaction. Moreover, Wax et al. note that in the Sioux classrooms observed in their study, it was not until the seventh grade that student silences were all pervasive. In the intermediate grades (4th-6th), both silence and disorder were common, with disorder being the more frquent. Darnell (1971) also notes a similar dichotomy. An alternative explanation for the somewhat contradictory reports of Indian nonverbal behavior in the classroom may reside in the fact that there are more than 300 American Indian tribes. It is quite possible that there are a number of different patterns of conversational etiquette, rather than a single

pan-Indian one. Tribes also vary in the extent to which they control their own school systems. Students' reaction to the classroom setting may vary accordingly. Currently, no systematic research has been done on how much, if any, intertribal variation occurs in the nonverbals of conversational etiquette.

Although the study includes a very small sample of teachers, their behaviors in the Choctaw classrooms, compared with the Lawrence teachers, showed differences which may be functionally related to the observed student differences. For instance, when the Choctaw students delivered shorter utterances, their teachers tended to exhibit longer turn switching pauses. In considering the potential for cross-cultural interference in Indian education, Mohatt and Erickson (1981) have suggested that the amount of time the teacher allows for the children to respond is an important aspect of culturally patterned teacher behavior, reflecting the tempo and directiveness of classroom interaction. Their study showed that an Odawa teacher paused longer for student replies than his non-Odawa counterpart. The shift to longer pauses by the non-Indian Choctaw teachers might therefore reflect an adaptive accommodation to the Indian students. Conversely, however, the Anglo

teachers may possibly have been pausing longer for student replies, being somewhat unsure that the students' utterances were ended; or perhaps they needed additional time to cognitively process a response to a shorter than expected reply.

The teachers at Choctaw also posed more questions overall. Increased teacher questioning could reflect an attempt to secure more feedback than occurs in the relatively shorter Choctaw student replies. The Choctaw teachers' questions, were also of shorter durations, when compared with their counterparts in Lawrence, suggesting a possible response matching adaptation on the part of the teachers in the Choctaw classrooms.

In summary, this study attempted to quantify, under switchboard participation conditions, differences in nonverbal interaction in the Choctaw intercultural classroom. The observed differences in the gaze and talk-silence behavior between Choctaw and Anglo students are consistent with interference theory. The present study looked at differences between students operating within the switchboard. Future research should investigate whether these differences are more global, as opposed to being restricted to switchboard participation. Additional data on the degree to which students and

teachers find these differences problematic would help illuminate the present findings. Are misattributions common, with teachers seeing students as inattentive, laconic, and dull-witted; while students see their teachers as too directive and bossy? Evidence cited by Blanchard (1981), Guilmet (1979), and Key (1975) supports the existence of such misattributions. An answer to these questions would more fully establish the relevance of sociolinguistic interference in the American Indian classroom as a factor associated with educational failures of Indian children.

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Footnote

[1]These utterances were restricted to those that had durations between the second and third interquartiles of the teacher utterance frequency distribution (i.e., between 1.2 and 8.8 s). In this way, utterances that were either very short or very long were excluded from the analysis in an effort to increase listener-gaze homogenity, since lenthy utterances would presumably be subject to increasing student inattention while short utterances might not enter the threshold of student attention.